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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/863,402 | 05/24/2001 | Norio Takahashi | 05225.0633 | 9191 |

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EXAMINER

ELKASSABGI, HEBBA

ART UNIT PAPER NUMBER

2834

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/863,402

Applicant(s)

TAKAHASHI ET AL.

Examiner

Heba Elkassabgi

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Asano et al. (U.S. Patent 6008559) and further in view of Nagate et al. (U.S. Patent 5369325) and Applicants prior art (APA).

Asano et al. discloses in Figure #1 a stator (1) having an armature coil (three-phase winding)(not shown) wherein a rotor (2) is configured for providing magnetic irregularities in a circumferential direction and that the rotor (2) includes permanent magnets (23) in a plurality of permanent magnet embedding holes (slits)(22). In which the rotor core (21). The magnetic flux of an armature passing through adjacent magnetic poles is canceled, and wherein the rotor (2) includes non-magnetic regions on a circumferential side of the permanent magnets (23). Wherein, a centrifugal force on the permanent magnet is supported by a face intersecting a direction of magnetization of the permanent magnet at right angles and on an opposite side of the permanent magnet embedding hole (slits)(22) to a side of the non-magnetic region. However,

Asano does not disclose that a plurality of projections projecting into the embedding hole

Nagate et al, discloses in Figure 19 triangular projecting edges (36) projecting inwardly into the slots (25), in which the permanent magnets (30 and 31) are held by the edges (36) in order to hold the respective magnets within the slots. Additionally, Nagate discloses that the magnetic flux is prevented from passing through the rotating shaft to improve the efficient of the electric motor.

Applicants prior art disclose sin Figure #4 discloses the permanent magentic flux of an armature passing between the adjacent poles, in order to short circuit the magnet. Furthermore Applicants Prior Art shows a radius portion of a root (3) of the projection for positional location of the permanent magnet (8) that is provided on a side of a face that is intersecting a direction of magnetization of the permanent magnet (8) at right angles and on an opposite side to a side of the non-magnetic region, for the purpose of improving magnetic flow within the rotor and between the rotor and the stator.

It would have been obvious to one of ordinary skill in the art to combine the structure of Asano et al. with the slot structure of Nagate et al, in order for the magnets to be held securely by the triangular edges in order to firmly hold the magnet in place and the applicants prior art of Figure #4 in which the permanent magnet flux is short circuited of an armature passing between the adjacent poles.

In regards to Claim 5, Asano et al. discloses the claimed invention except for the percentage of contact of the permanent magnet and the projection for positional location of the permanent magnet. It would have been obvious to one having ordinary skill in the

art at the time the invention was made to base the positional length of the permanent magnet with the projections in relation to one another, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272,205 USPQ 215.

In regards to Claims 8-11, Asano et al. discloses the claimed invention except for the percentage of the thickness of the permanent magnet in relation to thickness of the wall region of the rotor. It would have been obvious to one having ordinary skill in the art at the time the invention was made to base the wall thickness of the rotor core in relation to the position of the permanent magnet, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272,205 USPQ 215.

Response to Arguments

Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new grounds of rejection.

Conclusion

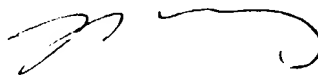
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heba Elkassabgi whose telephone number is (703) 305-2723. The examiner can normally be reached on M-Th (6:30-3:30), and every other Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

A handwritten signature in black ink, consisting of a stylized 'H' followed by a long horizontal line that curves upwards at the end.

H.Y.E.
May 16, 2003